PREPRODUCTION INITIATIVE
MOBILE OIL EVACUATION SYSTEM
TEST PLAN

SITE: NAB CORONADO

1.0 OBJECTIVE

This test plan describes the data collection procedure for evaluating the Mobile Oil Evacuation System (MOES), an oil evacuation and delivery system used in an operational environment. The data will be used to determine the system's efficiency, effectiveness, and overall success in completing oil changes on small boat units. The environmental and cost benefits of using such a system versus the currently used method of hand pumping the oil into containers will be established.

2.0 DESCRIPTION

Currently, engine oil changes are scheduled based on operational hours. For example, engine oil changes are performed on rigid hull inflatable boats (RHIBs) after every 75 hours of operation. Each engine contains 6.5 gallons of oil. A hand pump is used to remove the oil from the engines and place it into 5-gallon containers. During this operation, oil can potentially spill on the deck of the boat and/or into the bilge. If a spill occurs, rags are used to clean it up, generating additional waste. Any oily residue that remains in the bilge mixes with the bilge water and is discharged overboard when the bilge pump is activated.

To simplify this process, and to eliminate discharges into the waterways and the generation of hazardous waste, an oil evacuation and delivery system will be evaluated. MOES Model No. 30/30, manufactured by American Marine Oil System (A.M.O.S.), has been selected for evaluation at NAB Coronado by Beachmaster Unit 1 (BMU-1) and Special Boat Unit 12 (SBU-12). This system can evacuate 60 gallons of oil via a vacuum pump and hose, allowing several boats to be serviced consecutively without draining the system. The length of the hose allows the boats to be serviced safely while in the water. The waste oil is drained into collection tanks for proper disposal later. A commercial gear pump, which is controlled by a digital metered oil gun, then delivers the fresh oil. The unit is mounted on a trailer that can be towed.

In addition to the RHIBs (SBU-12), this system will be evaluated on the lighter amphibious re-supply cargo (LARC-V) boat (BMU-1). The LARC-V is an amphibious vehicle manufactured in the late 1960s. It has one diesel engine that contains 8 gallons of oil. Engine oil is changed every six months or 200 operating hours or sooner, if operating in a harsh environment. The LARC-V also contains two gearboxes- the forward/reverse and the transfer gearboxes. These gearboxes are serviced every six months or sooner if in a harsh environment. During these operations, oil can potentially spill on the deck of the boat and/or into the bilge, resulting in the same concerns as the RHIBs. The MOES will be used to evacuate and refill the engine oil and evacuate the gearbox oil on the LARC-

V. Because of cross contamination concerns, the gearboxes will not be filled using this system.

3.0 TEST PLAN

This test plan will be used to evaluate the effectiveness of the A.M.O.S. MOES. Quantitative and qualitative data will be collected and used to evaluate the system's ability to provide safer and more efficient oil changes while eliminating the generation of oily rags and reducing oily water discharge to waterways.

3.1 Approach

One MOES will be used during the implementation of this test plan. Quantitative and qualitative data will be collected by completion of the Operator's Log and the Monthly Repair and Comments Log. The system will be evaluated for approximately 12 months. The sharing arrangement will be coordinated between SBU-12 and BMU-1.

3.2 Instructions for Completing the Operator's Log

The Operator's Log includes the following information needed to complete the evaluation. Complete this log each time the MOES is operated.

- **Date**: Record the date on which the oil change was performed.
- **Unit No.**: Check the box corresponding to your unit, SBU-12 or BMU-1.
- **Boat Information**: Circle the type and record the number of the boat that received the oil change.
- **Type of Oil Change**: Check the boxes corresponding to the types of oil changes performed.
- **Volume of Waste Oil**: Record the amount of waste oil that was collected.
- **Man-hours to Service the Boat**: Record the amount of time it took to perform the oil change, including setup and tear-down (e.g., 2 people at 2 hours each equals 4 man-hours).
- **Number of Rags Generated**: Record the number of rags used during the oil change.

Note: One sheet should be completed for each boat that receives an oil change.

3.3 Instructions for Completing the Maintenance and Repair Log

Each boat unit should complete the Maintenance and Repair Log for any action performed on the unit. The qualitative assessment part of this log needs to be filled out once per month during the evaluation period even if no maintenance or repairs are performed. If repairs are necessary, contact Geneen McQuaid or Raymond Wendrzycki. Due to contract requirements, the vendor should not be contacted directly—except in case of emergency.

3.3.1 Maintenance

Periodic Maintenance on the MOES is scheduled in six month intervals. The attached MOES Maintenance Sheet outlines the 6-month and annual servicing for the MOES system. This sheet should be referred to in order to comply with the proper periodic maintenance schedule tasks.

On the Maintenance and Repair Log, enter the date and the name of the individual completing the log.

3.3.2 Repairs

Record any repairs(s) completed. Describe and record the required repair, cause, parts, cost, repair time, downtime, and recommended actions to prevent recurrence.

3.3.3 Qualitative Assessment

Any observations, comments, or suggestions pertaining to the overall performance of the system should be recorded.

4.0 REPORTING

Ltjg. Kaylor (SBU-12) and Senior Chief Duris (BMU-1) have approved the use of these data collection sheets for this project. As previously described, the Operator's Log will be completed each time the system is used, and the Maintenance and Repair Log will be completed once per month by SBU-12 and BMU-1. Data will be collected for one year. During the evaluation period, the log sheets will be faxed or electronically transmitted to Geneen McQuaid/Ray Wendrzycki (see Section 4.1, Point of Contact, for fax numbers) monthly, at a minimum. The final report will include information on the system's overall performance, cost-effectiveness, and ability to interface with site operations.

4.1 Points of Contact

If any questions arise or if repairs are necessary during the evaluation period, contact one of the following individuals immediately.

POC	Affiliation	Phone Number	Fax Number
Geneen McQuaid	UTRS, Cherry Hill, NJ	(856) 667-6770	(856) 667-7586
Ray Wendrzycki	NAWC Lakehurst, Lakehurst, NJ	(732) 323-1666	(732) 323-4917

Please note that due to contract requirements, NAB Coronado should **not** contact the MOES vendor directly unless there is an emergency. All communication with the vendor should be directed through UTRS.

Engine Oil Change
Operator's Log Sheet

Date _____ **Unit No.** ☐**SBU-12** ☐**BMU-1**

Operator(s):_____

Boat (Circle one): LARC RHIBS Mark V Boat No._____

Type of oil change: Engine ☐ **Forward/Reverse Gearbox** ☐ **Transfer Gearbox** ☐

Volume of waste oil:_____

Man-hours to service the boat:_____

Number of rags used:_____

Operator comments or suggestions: _____
_____
_____
_____

Note: Use one log sheet for each boat receiving an oil change.

Daily Maintenance Checklist

Maintenance Operation	Complete	Corrective Action Taken
Inspect hoses and fittings		
Inspect inside of machine through opening in back		
Check tanks and hoses for any sign of oil/fluid leakage		
Check power cord for jack tears and/or prong damage		
Test Panel Alarm		

Fax to: Raymond Wendrzycki at (732) 323-4917 (DSN 624-4917) and Geneen McQuaid at (856) 667-7586.

Maintenance and Repair Log

***IF MONTH IS NOVEMEBER 2002 OR MAY 2003 PLEASE FILL OUT ATTACHED PERIODIC MAINTENANCE SHEET.**

Date_____ **Operator**_____

Please circle the appropriate unit: SBU-12 BMU-1

REPAIR

List any repair(s) required this month:

_____

_____

Describe the cause of the required repair(s):

_____

_____

List repair parts, cost (if known), and time required to complete the repair:

_____

_____

List the amount of downtime due to repair:

_____

_____

Detail corrections/suggestions made to prevent future recurrences:

_____

_____

QUALITATIVE ASSESMENT

Please comment on the overall performance of the unit this month:

_____

_____

Please comment on any problems encountered this month:

_____

_____

Please suggest any possible improvements:

_____

_____

Additional comments/observations:

_____

_____

***ATTENTION*: Complete this form and fax it with the *Operator's Logs* to Geneen McQuaid at (856) 667-7586 and Raymond Wendrzycki at (732) 323-4917 or (DSN 624-4917).**

MOES Periodic Maintenance Sheet

To be performed in November

Maintenance Operation	Start Time	Finish Time
Change oil delivery filter		
Change oil mist filter		
Check oil reel swivel and fittings for debris		

To be performed in May 2003

Maintenance Operation	Start Time	Finish Time
Remove and replace oil meter gun battery		
Align voltage meter		

Comments or Suggestions:

Fax to: Raymond Wendrzycki at (732) 323-4917 (DSN 624-4917) and Geneen McQuaid at (856) 667-6770.